

THE TIDAL WAVE OF PEOPLE

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ABSTRACT

Thesis: "... the unprecedented growth in human population holds out the warning that in the final quarter of this chaotic century the accumulated effect of this increase will create a devastating upheaval in the social order of the entire human family"

The rate of the world's population growth has increased spectacularly in recent centuries. Three hundred million people were living at 1 A.D.; in 1700 years this figure doubled to 600 million; by 1900, it had more than doubled again to 1,600,000,000 in 200 years; within only 60 years, it had doubled again to 3 billion plus. The present prospect is that by the year 2000, world population will double again to 6 billion plus. This rapid growth is not the result of an increased birth rate, but of a decline in the death rate, due to agricultural and industrial revolutions, and particularly to the impact of scientific technology. The 1966 world growth rate of two percent, in the face of a food production increase of only one percent, aggravates the threat of starvation. An anticipated rapid decline in the death rate of developing countries will bring increased rates of growth, unless widespread starvation intervenes. There is little prospect of an early decline in high birth rates.

The situation in the United States is much less ominous. Here the birth rate fell from 55 per 1000 persons in 1820 to 18.4 births per 1000 persons in 1934—without a significant use of modern contraceptive techniques. Despite this drop in the birth rate, the population of the United States increased 40 times, from 4 million to 160 million, in 180 years. The growth was the consequence of a death rate that fell from an estimated 25 per 1000 in 1800, to 17.2 in 1900, to a low of 9.5 today. United States population hopefully may stabilize by year 2000–2025 at 300–350 million, based on the most favorable estimates. Meanwhile, world population is estimated to climb to 6–7.5 billion by the year 2000. The main problem in the United States will be the quality of life in the face of this increased congestion. In the rest of the world, the problem will be physical survival, the effect of which, on domestic United States, is difficult to forecast.

A generation ago there was no population problem, or at least, no recognition of one. The newspapers mentioned the "starving Armenians;" the history books noted the Irish "potato famine." Apart from peripheral notes of this kind, the growing ground-swell of the world's population, and its first identifiable effects on man's society, seemed an improbable and obscure subject for concern. Population was as unlikely a subject as space travel.

Today this situation has swung 180° to confront the present time with its gravest problem. Within the last decade the world's exploding population has become front-page news.

President Johnson recognized the gravity of the situation when, in his State of the Union Message in 1965, he declared that "I will seek new ways to use our knowledge to help deal with the explosion in world population and the growing scarcity in world resources." Since then he has repeated this initial emphasis frequently.

Secretary General U Thant has warned that "... it is being increasingly realized that over the two or three decades immediately ahead, when present world-wide efforts to raise food production will not have yielded the fullest results, the problem of growing food shortage cannot be solved without in many cases a simultaneous effort to moderate population growth. . . ."

The Vatican is deeply concerned. In his most recent Encyclical, the Pontiff referred directly to the problem in warning that "the size of the population increases more rapidly than available resources, and things are found to have reached apparently an impasse. . . ." More recently the Holy See has moved cautiously

toward granting, or implying to grant, greater family freedom in planning and spacing the number of a couple's children.

Clearly this unprecedented growth in human population holds out the warning that, in the final quarter of this chaotic century, the accumulated effect of this increase will create a devastating upheaval in the social order of the entire human family.

What exactly is happening? Let us turn back first to man's beginnings, for virtually the entire million or more years since man's tentative identification, life was a ceaseless, brutal effort to maintain his small and scattered family. The mere perpetuation of his increasingly "human" species, the true *Homo sapiens*, was his prime—though possibly unconscious—concern.

Despite this, by the birth of Christ, there were only 300 million people on earth. (In using figures such as these, it is necessary to allow for the inevitable inaccuracies of statistical conjecture.)

Yet now consider this. Within the next 1700 years, another 300 million people were added to the sum of the world's population—as large an increase in total numbers as the race had attained in the preceding million years.

Within the following 200 years, the population more than doubled again, to a total of 1,600,000,000 by the year 1900. Within only 60 additional years, the world total had doubled once more; in 1960 it stood at 3 billion plus.

Look what happened:

1 million years—300 million people

1700 years—doubled to 600 million people

200 years—more than doubled to 1,600,000,000

60 years—doubled again to 3 billion plus

At the 1967 rate of annual increase in world population of 2.0 percent, a billion additional people will be added in 10 to 12 years—with the prospect of doubling this total, this time in a mere 35 years.

Why such phenomenal growth? The answer, in a word: modern scientific and industrial technology. First came the development of inter-city trade and the establishment of a reliable agriculture. Increasingly food was grown for market, and the market got food to the people.

Building on this primitive but promising base, men learned gradually the elements of urban sanitation. They developed a climate that was conducive to the prolongation of life, particularly young life. And finally the true scientific breakthrough came in pasteurization, inoculation, and yellow fever control; and then in new insecticides, fertilizers, and wonder drugs. With every step, every year, there were new and stronger supports for life, less likelihood of early death. And the ensuing increase in total population was based on a geometric ratio of growth. The annual percentage of increase did not fully reflect the extent of the net increase.

Today agriculture *can* be highly scientific; contagious disease *can* be controlled; mortal illness in the very young *can* be limited; the distribution of food stuffs *can* be efficient—all with the consequence that the countries of the developing world *can*, and to some degree undoubtedly will, reduce their death rates even further in the decade ahead.

Historically, however, death rates are reduced before birth rates. If this were to continue to be the trend, a declining death rate might quickly be reversed to become a soaring death rate, because of famine.

The point, however, is that these times are caught in a population boom, not a baby boom. There are not more babies being born today per 1000 women of child-bearing age than before. In fact, there are almost certainly fewer babies being born to each 1000 women. The explosion in population results from fewer deaths, especially among the young—and, of course, from a continuing increase of women in the fertile period. Barring the likely prospect of starvation, the

death rate may continue to fall at an accelerating speed, to the end that the world's population will grow ever faster. Ultimately, of course, it will be checked by involuntary starvation or voluntary family limitation.

What is the result of it all? In 1930 there were 40 people per square mile of the earth's surface; today there are 63; by 2000 there will most probably be 142.

Or, put another way, in 1930 there were 2 billion people; today there are estimated to be 3,346,000,000 people; by the year 2000, something over 6 billion are in prospect. Harrison Brown, the great geophysicist at the California Institute of Technology, recently put this turn-of-the-century figure at 7.5 billion, based on a projected continuance of the present rate of increase.

Today in developing countries, birth rates range from 39 to 50 per 1000 population. In the developed countries, principally those of the Western world, the range is from 14 to 24 per 1000 population.

The consequence is that world population is estimated to be growing at a rate of two percent a year—with each annual two percent increase a larger net figure than the preceding one. In 1967, 125 million babies will be born, give or take several million; and in 1967, 35 million people will die. The net gain—if it could be called that in a hungry world—will be 70 million people, or by latest figures, perhaps 65 million. (This is not an exact science. The estimates improve with experience, but in many cases they are still very imprecise.)

This fantastic growth in human numbers is the result of the effective amelioration of human pain and suffering and early death. And, most ironically, as a result of these incalculable good works, as a result of the application of modern life-saving and life-preserving technology, the world faces the almost certain prospect, in 10 to 20 years, of pain and suffering and death on an undreamed-of scale when, for millions and millions of human beings, the food runs out.

The problem is simply that there will not be enough food—even less per capita than is available in the seriously undernourished world of 1967. Agriculturists estimate that, according to the degree of sophistication of the farming process, one half to one acre of arable land is required to feed one person; this is providing a balanced diet of calories and proteins. At the present rate of growth in the world, there is required *every single day* by this standard, up to 180,000 new acres of arable land—that is, 281 square miles of additional productive farmland.

Today the world's agricultural production is increasing at an annual rate of one percent. The world's population is increasing at an annual rate of two percent. Yet 75 percent of the people in the world's poor lands—two thirds or more of the world's total population—do not get enough to eat, even today. Their humanity is stunted and deformed by malnutrition. Many times, as a result, they come into adulthood as something less than full human beings.

Merely to maintain this inhumane condition, to do no more than preserve life for a time, despite debilitating malnutrition, to prevent a worsening of the human situation, will require a doubling of the world's agricultural production by the year 2000. That is not statistically or practically possible in light of the present rate of agricultural increase of one percent a year. Technologically, there is no question but that this rate could be raised substantially; whether it will be, however, depends on a degree of social, political, and economic progress which Twentieth Century man has already learned is more easily planned than achieved.

These general figures are, of course, world averages. In the developed countries, the picture—in respect to food alone—is not bad, so long as that food is not needed elsewhere. In the newly developing countries, on the other hand, the picture is ominous.

Now, what of the situation in the United States? How does this relate to what is happening in the world? What is the rate and direction of population growth in our own country? What will it mean for our lives?

In 1770, when men like Washington and Jefferson and Adams had other things

on their minds than demography, the population of our new nation was a mere 4 million souls. In 1870, as the tensions and terrors of the Civil War subsided, the population had increased a whopping 10 times to 40 million. Sometime during the rambunctious Theodore Roosevelt period, in the early post-Victorian America of gaslights and steamships, the number had doubled to 80 million. Obviously, the 19th century, whatever else it may have been, was 100 years of free and uninhibited reproduction. There was a continent to populate, a great nation to build. And, while the death rate had started to decline from a rough estimate of 25 per 1000 in 1800, it remained high throughout most of the century. Even as late as 1900, there were 17.2 deaths per 1000 persons, so that life expectancy at birth was only 27.3 years, compared to a death rate of 9.5 today, with life expectancy something more than 70 years. Clearly a prolific family was a national asset.

By the mid-fifties the population had doubled again to 160 million. This is to say that, in 180 years, the population of these United States had increased 40 times. And this growth took place in the face of a falling birth rate. For instance, the number of live births per 1000 population in the United States stood at 55 in 1820; at 44 in 1860; 40 in 1880; 32 in 1900. By the 1930's, live births per 1000 population was down to less than 18.4. Still the population totals climbed. Immigration played a part, of course, but some experts believe that it tended to repress our native birth-rate, which might have been higher had it not been for immigration.

Nowhere on earth had such population growth ever been known before (though it is exceeded today in some Latin American countries). Yet the end was still not in sight. Estimates toward the end of the fifties put United States population as high as 370 million by the end of the year 2000. And why not? In the 20-year period, 1930-1950, the U. S. population increased by 28 million. In the single decade, 1950-1960, it increased by another 28 million.

Yet suddenly family mores shifted. Between 1958 and 1966, the birth rate declined 30 percent. For 1966 the birth rate stood at 18.5 per 1000 people—very close to the former all-time lows of 18.4 recorded during the depression years of 1933 and 1936.

At the height of the baby boom, the United States was growing by an annual increase of nearly 1.8 percent per year, a rate which would double the population in 39 years. Today this rate is 1.1 percent, which requires 63 years for population doubling. Optimists now say we will level off at or close to the year 2000 with a relatively stable population of 300 million. Considering the efficacy of The Pill, not to mention the pills yet to come, this may be possible.

Yet how will we manage 300 million, the lowest stable population we can anticipate? We can scarcely deal with 200 million today. The problem is not one of food in the United States. The problem lies in our concern for the quality of individual life in a nation surrounded by a world in which this quality is steadily declining.

Because of America's great natural wealth, and the industry of her people, this nation has thus far not only kept abreast of her climbing population in a number of critical social services, but has actually forged ahead in notable areas.

The ratio of hospital beds to the total population, for instance, has risen. In 1920 there were 7.7 beds per 1000 population. In 1960 there were 9.2 beds per 1000 people. In 1964 the ratio slipped slightly to 8.9. Whether it can keep abreast of our continued growth remains to be seen.

Total social welfare expenditures by federal, state, and local governments have grown from \$318 million in 1940 to more than \$71 billion in 1964, far outstripping the rate of population growth or the rate of the dollar's depreciation. Elementary and secondary school enrollment, for instance, has swollen from 28 million in 1940 to 48 million in 1965. That requires a lot of new classrooms, and teachers, and new tax dollars.

Perhaps the most serious consequence of this growing population, rather than the mere cost of material facilities to house, employ, and care for the people, is the social problem of managing an ever-more congested society. In 1900 there were only 25.6 Americans per square mile of land area. In 1940 there were 44.2 people for the same square mile; by 1960 the figure was already beginning to climb above 60 people per square mile.

Despite this growth, the farm population of the United States has dropped from 30 to 12 million in 25 years, and the number of farms has been cut in half. What this clearly says is that the great increase in people per square mile has not been spread across the vast, open square miles of America, but has been concentrated in urban centers that today we describe as megalopolises—whole clusters of cities, some of them hundreds of miles in length. The long industrial stretch from Boston to Norfolk is an example of such a megalopolis; another reaches from San Diego to Santa Barbara. These are the places where the people are—and the concentration is becoming hideous.

Make no mistake: There is nothing wrong with a huge city, if men knew how to plan, to build, and to operate such a city for the individual's greatest fulfillment as a human being. Obviously, however, American society does not yet possess these skills—at least, not in effective quantity. New York City is no longer a viable city in terms of the life-experience of the average inhabitant, nor is Los Angeles, nor Chicago—their populations have outgrown 20th Century man's skill to manage such numbers successfully. And it is this lack of managerial skill, in the face of a population that shall grow *at least* 50 percent more before stabilization, which creates this nation's acute social and economic problems, both of the present and the future.

Hence, I would draw two conclusions which are, in fact, warnings:

1. Because we are not dealing creatively today with urban concentration, and the attendant social dislocations, there is the possibility that we may deal even less effectively with a population of at least 300 million in only 30 years. If that were to be the case, the quality of the individual's life in America would surely decline.

2. Because the ratio of food and other basic natural resources to population is worsening today throughout most of the world because of a growth rate of two percent, however successful we may be in dealing with our own growing but presumably stabilizing population, we will be subject to all the pressures of a poverty-stricken world beating at our gates and at our conscience. It is not reasonable to expect to remain an island of prosperity in the midst of a sea of want. And the effect on us as a nation in being such an island is not pleasant to contemplate.